**What is claimed is:**

1. An electronic camera apparatus, comprising:

an A/D converting unit obtaining captured image data by A/D converting an image signal that is obtained by capturing an image;

a first image data processing unit executing a preprocess for generating image data to be recorded from the captured image data;

a second image data processing unit, which is allowed to execute a process in parallel with the preprocess executed by said first image data processing unit, executing a preprocess that includes a filter process and a pixel number conversion process in order to generate image data to be displayed, whose data amount is smaller than the image data to be recorded, from the captured image data;

a storing unit temporarily storing both image data, which is obtained by said first image data processing unit and for which the preprocess for generating image data to be recorded is executed, and image data, which is obtained by said second image data processing unit and for which the preprocess for generating image data to be displayed is executed; and

a third image data processing unit executing an image process for making recording and a display, which are related to the captured image data, based on the image data to be recorded and the image data to be displayed, which are stored in said storing unit.

2. The electronic camera apparatus according to claim 1, wherein

The pixel number conversion process is configured to perform interpolation by selecting a combination so that pixel positions for which pixel number conversion is performed become suitable according to a reduction in an amount of image data.

3. The electronic camera apparatus according to claim 1, wherein

the filter process and the pixel number conversion process are configured as an LPF (Low Pass Filter) process, and a pixel number conversion process including an interpolation process considering a pixel position relationship after pixel number conversion, for a horizontal direction of the captured image data, and as an LPF process and a pixel number conversion process, which use a line buffer, the pixel number conversion process including an interpolation process considering

a pixel position relationship after pixel number conversion, for a vertical direction of the captured image data.

4. The electronic camera apparatus according to claim 1, wherein

said second image data processing unit comprises

a horizontal direction filter unit executing a filter process for a horizontal direction, which is an input order of the captured image data, for the captured image data,

a horizontal direction pixel number converting unit executing an interpolation process for reducing an amount of image data in the horizontal direction for image data for which the filter process is executed by said horizontal direction filter unit,

a vertical direction filter unit executing a filter process for a vertical direction for image data for which the interpolation process is executed by said horizontal direction pixel number converting unit, and

a vertical direction pixel number converting unit executing an interpolation process for reducing an amount of image data in a vertical direction for image data for which the filter process is executed by said vertical direction filter unit.

5. The electronic camera apparatus according to claim 1, wherein

said second image data processing unit comprises

a horizontal direction filter unit executing a filter process for a horizontal direction, which is an input order of the captured image data, for the captured image data,

a horizontal direction pixel number converting unit executing an interpolation process for reducing an amount of image data in the horizontal direction for image data for which the filter process is executed by said horizontal direction filter unit,

a multiplier multiplying the image data, for which the interpolation process is executed by said horizontal direction pixel number converting unit, by factors for a filter process for a vertical direction, and an interpolation process for reducing an amount of image data in the vertical direction,

a line buffer temporarily storing the image data obtained as a result of multiplication made by said multiplier in units of lines, and

a vertical direction pixel number converting unit executing the interpolation process for reducing the amount of image data in the vertical

direction based on the image data stored in said line buffer and image data in a next line, which is multiplied by said multiplier.

6. The electronic camera apparatus according to claim 5, wherein:

said line buffer comprises a line buffer different for each line data in a same color filter arrangement; and

said vertical direction pixel number converting unit executes an interpolation process for reducing an amount of image data in the vertical direction for each line data in the same color filter arrangement.

7. The electronic camera apparatus according to claim 3, wherein

if the preprocess by said second image data processing unit is executed for captured image data obtained by capturing an image with a progressive scanning method, an LPF process and a pixel number conversion process that includes an interpolation process considering a pixel position relationship after pixel number conversion are executed by using at least two line buffers for the vertical direction of the captured image data.

8. The electronic camera apparatus according to claim 1, wherein

said third image data processing unit is configured to execute an image data compression process as an image process for recording.

9. The electronic camera apparatus according to claim 1, further comprising

a fourth image data processing unit, which is allowed to execute a process in parallel with the preprocess executed by said first image data processing unit, generating index image data, whose data amount is smaller than the image data to be displayed, from the captured image data.

10. The electronic camera apparatus according to claim 1, wherein

said third image data processing unit is configured to generate index image data whose data amount is smaller than the image data to be displayed based on the image data to be displayed, which is stored in said storing unit.

11. The electronic camera apparatus according

to claim 1, wherein

the image signal is obtained by capturing an image with a progressive scanning method or an interlaced scanning method.

12. An image processing method for use in an electronic camera apparatus, comprising:

obtaining captured image data by A/D converting an image signal that is obtained by capturing an image;

executing a first preprocess for generating image data to be recorded from the captured image data, or executing a second preprocess that includes a filter process and a pixel number conversion process in order to generate image data to be displayed, whose data amount is smaller than the image data to be recorded, from the captured image data, or executing the first preprocess and the second preprocess in parallel;

temporarily storing both image data, for which the first preprocess for generating image data to be recorded is executed, and image data, for which the second preprocess for generating image data to be displayed is executed; and

executing an image process for making recording and a display, which are related to the captured image data, based on the stored image data to be recorded and

the stored image data to be displayed.

13. An electronic camera apparatus, comprising:

A/D converting means for obtaining captured image data by A/D converting an image signal that is obtained by capturing an image;

first image data processing means for executing a preprocess for generating image data to be recorded from the captured image data;

second image data processing means, which is allowed to execute a process in parallel with the preprocess executed by said first image data processing means, for executing a preprocess that includes a filter process and a pixel number conversion process in order to generate image data to be displayed, whose data amount is smaller than the image data to be recorded, from the captured image data;

storing means for temporarily storing both image data, which is obtained by said first image data processing means and for which the preprocess for generating image data to be recorded is executed, and image data, which is obtained by said second image data processing means and for which the preprocess for generating image data to be displayed is executed; and

third image data processing means for executing an image process for making recording and a display, which are related to the captured image data, based on the image data to be recorded and the image data to be displayed, which are stored in said storing means.